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=> d his

     (FILE 'HOME' ENTERED AT 17:42:41 ON 02 DEC 2002)
     FILE 'CA' ENTERED AT 17:42:52 ON 02 DEC 2002
L1      11 S LI H?/AU AND ANALYST/SO
L2       2 S L1 AND 1987/PY
L3   17018 S (INCEMENT? OR STANDARD OR MULTIPLE OR SEVERAL OR PLURAL?)(3A)
           (ADDITION OR INJECTION OR SUBTRACTION)
L4      23 S L3 AND PHASE(3A)(PLOT? OR DIAGRAM? OR GRAPH? OR REPRESENTAT?)
L5     477 S L3 AND AUTOMAT?
L6     174 S L5 AND(MIX? OR SOLUTION)
L7     132 S L6 NOT CHROMATOG?
L8     122 S L2,L4,L7 NOT PY>1998
L9     118 S L8 NOT(GELATIN OR SUPERCONDUCT? OR MAGNET)
L10    113 S L9 NOT(CLOUD OR OXIDE SYSTEM OR ELECTROPHOR?)

=> d 110 bib,ab 1-113

L10  ANSWER 10 OF 113   CA   COPYRIGHT 2002 ACS
AN   128:187964   CA
TI   Multipoint calibration from one standard solution and automatic dilution of
     overrange samples for flame atomic absorption spectrometry
AU   Frary, Brian D.
CS   Varian Australia Pty Ltd., Victoria, 3170, Australia
SO   Analyst (Cambridge, United Kingdom) (1998), 123(2), 233-237
AB   A modified peristaltic pump sample introduction system for flame at.
     absorption spectrometry (AAS) is described.  The device provides automatic
     instrument calibration from a single bulk std.  The modifications overcome
     the difficulties previously assocd. with the use of peristaltic pumps.
     Single and dual pump systems were evaluated for normal and std. addn.
     calibration.  Data from both indicate that accuracy and precision are as
     good as, or better than, that achieved with manual std. prepn.  Automatic
     overrange sample diln. is also provided by the system.

L10  ANSWER 18 OF 113   CA   COPYRIGHT 2002 ACS
AN   126:270593   CA
TI   Phase behavior of nematic-nonnematic binary systems
AU   Sunohara, K.; Fujimaru, A.; Shinya, A.; Kobinata, S.
CS   Toin University of Yokohama, Yokohama, 227, Japan
SO   Molecular Crystals and Liquid Crystals Science and Technology, Section A:
     Molecular Crystals and Liquid Crystals (1995), 265(Proceedings of the 15th
     International Liquid Crystal Conference, 1994, Pt. 5), 2747-2752
AB   The effect of addn. of several nonnematic solutes to nematic liq. crystal
     5CB was studied.  The increase of nematic-isotropic phase transition temp.
     in the p-amino-p'-nitrobiphenyl/5CB mixt. was obsd., contrary to the
     usually obsd. depression.  The results were analyzed by a mean field
     treatment of mixt.

L10  ANSWER 21 OF 113   CA   COPYRIGHT 2002 ACS
AN   126:152144   CA
TI   A new data processing algorithm for the addition method
AU   Belchev, S.; Ivanova, M.
CS   Fac. Chem., Univ. Sofia, Sofia, Bulg.
SO   Analytical Laboratory (1996), 5(3), 206-210
AB   A new algorithm for data processing applicable to the addn. method is
     proposed.  Its advantage is the statistical assessment of the linearity of
     function signal.  At least three addns. are required by this algorithm but
     the computational procedure is as rapidly convergent when more than three
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stds. are used. Two programs are written on the proposed algorithm and applied to data processing in the anal. chem. The one of them is a part of the package serving an **automated** photometric system for spectral photog. plates processing.

L11 ANSWER 41 OF 113 CA COPYRIGHT 2002 ACS
AN   116:268086 CA
TI   **Automated** gravimetric management of **solutions**.   Part 1. High-performance microcomputer-controlled gravimetric buret
AU   Cunha, Ildenise B. S.; Pasquini, Celio
CS   Inst. Quim., Univ. Estad. Campinas, Campinas, Brazil
SO   Analyst (Cambridge, United Kingdom) (1992), 117(5), 905-11
AB   A versatile gravimetric buret and the necessary interface that allows it to be controlled by an IBM-PC microcomputer are described. The buret employs an electronic balance that holds three 30 mL flasks. The flasks are used for delivering different titrants or std. **solns**. and are connected to the sensor through the bottom of the balance. The addn. of the **soln**. is controlled by poly(tetrafluoroethylene) electromech. valves housed inside the unit. The flasks can be refilled **automatically** from larger reservoirs placed outside the case. **Soln**. level sensors are used to realize **automatic** refill when necessary. The mass delivered from the flasks is read by the computer through an RS232C interface. The buret can, when driven by the appropriate software, perform potentiometric, biamperometric and spectrophotometric titrns., **std. addns.** procedures and the prepn. of std. **solns**.

L10 ANSWER 49 OF 113   CA   COPYRIGHT 2002 ACS
AN   110:165121   CA
TI   The Orion 960 Autochemistry system; a complete potentiometric analyzer
AU   Comer, J.
CS   Orion Res., Inc., USA
SO   Advances in Instrumentation (1987), 42(1), 489-96
AB   The Orion 960 Autochem. System is a new instrument for detg. ions and neutral species in **soln**. by potentiometric techniques. The instrument uses pH or ion-selective electrodes for direct measurement, following calibration in two buffer or std. **solns**. It also uses electrodes in a variety of techniques based on the measurement of changes in electrode potential as a std. **soln**. is added to the sample. These techniques include **automatic** potentiometric titrn. using fixed mV or pH end points, first and second deriv., and titrns. based on the use of Gran anal. The Orion 960 can also analyze samples using KAP anal., a technique based on calcn. of sample content following a series of **addns**. of **std. soln.**; the electrode senses the same ion in the sample and the std. The most important of the KAP techniques is probably **multiple** known **addn**. (MKA), which can provide reproducibility and precision approaching that of titrn., for ions which are difficult to titrate such as sodium, potassium, and nitrate. With direct measurement capabilities, **automatic** titrn., Gran anal. and KAP techniques, the ORION 960 can calc. results from any part of the titrn. curve, before, at, or after the endpoint, which leads to the description in the title, "a complete potentiometric analyzer".

L10 ANSWER 56 OF 113   CA   COPYRIGHT 2002 ACS
AN   108:105456   CA
TI   Computer approach to ion-selective electrode potentiometry by two standard additions and subtractions methods through ionic strength calibration
AU   **Li, Heng**
CS   Food Sci. Dep., Shanghai Fish. Univ., Shanghai, Peop. Rep. China
SO   **Analyst** (Cambridge, United Kingdom) (**1987**), 112(11), 1607-9

AB   The effect of ionic strength in std. addns. and subtractions methods has
been utilized for detg. an unknown concn. using an ion-selective electrode
without prior calibration of the electrode. In the simplest instance, only
2 std. addns. or subtractions are required. An initial value of unknown
concn. or electrode slope is first assumed to solve the equations
repeatedly. This method gives greater accuracy than the methods which are
used at present. The method was used to evaluate the unknown concn. and
electrode slope. The blank soln. has the same ionic strength as the std.
soln. in the 2 std. addns. method. In the 2 std. subtractions method, a
suitable blank soln. is chosen. The effectiveness of computer iterative
soln. of the 2 std. addns. method is demonstrated on a lead sample.

L10 ANSWER 79 OF 113 CA COPYRIGHT 2002 ACS
AN   95:121178 CA
TI   Multiple injector flow through dissolution cell for dissolution testing
apparatus
IN   Smolen, Victor F.
PA   USA
SO   U.S., 9 pp.
PI   US 4279860   A   19810721   US 1980-162780   19800625
PRAI US 1980-162780   19800625
AB   An app. for testing the dissoln. properties of drugs in order to predict
their bioavailability comprises a **multiple-injection** dissoln. cell for
rapidly and/or iteratively inserting a drug specimen into a dissoln.
testing system having a plurality of flow channels configured either as a
linear or circular array to facilitate the rapid and/or **automatic** alignment
of each flow channel successively with the dissoln. chamber of a testing
system.

L10 ANSWER 86 OF 113 CA COPYRIGHT 2002 ACS
AN   88:94605 CA
TI   Determination of residual chlorine in water with computer **automation** and
residual-chlorine electrode
AU   Rigdon, Lester P.; Moody, Gwilym J.; Frazer, Jack W.
CS   Lawrence Livermore Lab., Univ. California, Livermore, Calif., USA
SO   Anal. Chem. (1978), 50(3), 465-9
AB   Active Cl (3-100 ppb) was detd. in water with an accuracy of 2 ppb using
the Orion model 97-70 residual-Cl electrode and the known **std.-addn.**
potentiometric technique to measure the p.d. between iodide and I that is
generated by active Cl. The assay is computer-**automated** to carry out the
multiple addn. of a **std**; measure the potentials; plot the potentiometric
curve, its Gran version, and an error functton; and calc. the concn. of
active Cl in the assay **soln.** The electrode, the chem. reactions that occur
during the assay, the prepn. and storage of stds., and the procedure are
discussed. Data obtained from the assay of stds. prepd. from deionized
water, 2 sources of public water supply, and 1 swimming pool are presented.

L10 ANSWER 94 OF 113 CA COPYRIGHT 2002 ACS
AN   84:159228 CA
TI   Microdetermination of ammonia using an ammonia gas-sensing electrode and a
minicomputer
AU   Selig, Walter; Frazer, Jack W.; Kray, Arthur M.
CS   Lawrence Livermore Lab., Univ. Caifornia, Livermore, Calif., USA
SO   Mikrochim. Acta (1975), 2(6), 675-82
AB   NH3 (2.8 ppm-14 ppb) was detd. by potentiometric titrn. at pH 12-12.5 at an
NH3 gas-sensing electrode by using the **multiple addn.** method and Gran
plots. A computer-controlled titrn. system was used for the titrn. and for
data processing. NH3 sample **soln.** (1 ml) was added to 49 ml H2O, and 0.5

ml 10N NaOH was added. Various fixed amts. (1-10 ml) of the same **soln.**
were then added from the computer-controlled buret. Recoveries increased
with decreasing amts. of total titrant. The relative std. deviations were
3.01 and 0.98% for the detn. of 2.8 ppm and 28 ppb N, resp., by using 2.5-
ml titrn. vol. The method is applicable to the detn. of nitrate after
redn. to NH3 and to org. N after Kjeldahl digestion.

L10   ANSWER 95 OF 113 CA COPYRIGHT 2002 ACS
AN   84:83643 CA
TI   On-line, computer-controlled potentiometric analysis system
AU   Ariano, John M.; Gutknecht, W. F.
CS   Dep. Chem., Duke Univ., Durham, N. C., USA
SO   Anal. Chem. (1976), 48(2), 281-7
AB   A computer-controlled, direct potentiometric anal. system was developed.
      During a typical anal., a series of **std. addns.** are made to an unknown
      soln. in a cell contg. an ion-selective electrode and a ref. electrode.
      These addns. are optimized in that the vol. of each is **automatically**
      adjusted so as to yield an even distribution of resulting cell voltages.
      The cell voltages (which are acquired with a computer-optimized sampling
      technique) and the **std. addn.** data are fit to the Nernst equation with the
      nonlinear least squares procedure. This system was used to **automatically**
      analyze for 10-1 to 10-3M K with accuracy and precision both being ~2%.

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